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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,942	05/10/2001	Kikuo Ono	HITA.0052	4051

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EXAMINER

DUONG, THOI V

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/851,942	ONO ET AL.	
	Examiner	Art Unit	
	Thoi V Duong	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-21, 23 and 24 ~~is/are~~ are pending in the application.
- 4a) Of the above claim(s) 6-8 and 12-21 ~~is/are~~ are withdrawn from consideration.
- 5) ☒ Claim(s) 3, 4, 23 and 24 ~~is/are~~ are allowed.
- 6) ☒ Claim(s) 1, 5 and 9-11 ~~is/are~~ are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0903</u> | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

1. This office action is in response to the Amendment, Paper No. 8, filed August 26, 2002.

Accordingly, claims 1, 3-5 and 9-11 were amended, claims 2 and 22 were cancelled, and new claims 23 and 24 were added. Claims 6-8 and 12-21 were previously withdrawn. Currently, claims 1, 3-5, 9-11, 23 and 24 are pending in this application.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 5 and 9-11 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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4. Claims 1 and 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim (USPN 6,038,003).

As shown in Figs. 4 and 6f, Kim discloses a liquid crystal display device comprising:

a first insulating substrate 101 and a second substrate (not shown, col. 1, lines 40-52) being disposed so that respective main surface thereof are opposite to one another;

a liquid crystal layer being interposed between the first and second insulating substrate;

gate wiring lines 113 being formed on the first insulating substrate 101 and transmitting scanning signals;

a gate insulating film 117 being composed of the first insulating substrate 101 and the gate wiring lines 113;

drain wiring lines 123 being composed of metal films (col. 8, lines 15-18) formed on the gate insulating film 117 and transmitting video signals;

thin film transistor sections, each of which has a semiconductor layer 133 located at least over a part of the gate wiring layer, a drain electrode 121 composed of a part of the drain wiring line located on said semiconductor layer and a semiconductor contacting layer 135 formed of a part of said semiconductor layer being contacted with a part of the drain wiring lines, a source electrode 131 composed of another metal film formed on said semiconductor layer to be spaced from and opposite to the drain electrode and another semiconductor contacting layer 135 formed of another part of the

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semiconductor layer being contacted with a lower surface of the another metal film, and a protective film 137 covering the drain wiring lines, the source electrode and the drain electrode; and

pixel electrode sections, each of which has a pixel electrode 141 being contacted with said source electrodes,

wherein a planar pattern of each of said semiconductor layers is broader than those of the metal layers of the drain wiring layer, the source electrodes, and the drain electrodes formed thereon, and a planar pattern of each of said semiconductor layers is broader than those of said semiconductor contacting layers (Fig. 6f), and

each of said drain wiring lines is connected to a pad portion 167 which has at least a metal layer 123 formed in the pixel area and a semiconductor layer 133a formed under said metal layer, and a planar pattern of said semiconductor layer formed under said metal layer of said pad portion is broader than a planar pattern of said metal layer (Fig. 6f).

wherein said semiconductor layer 133 is formed of nonimpurity doped amorphous silicon, and said semiconductor contacting layer is formed of amorphous silicon doped with phosphorous (col. 8, lines 3-10);

wherein said metal layers of the drain wiring line, the source electrode, and the drain electrode are formed of chromium (col. 8, lines 15-18); and

wherein said pixel electrode is formed of a transparent conductive film (col. 8, lines 54-57).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (USPN 6,038,003) as applied to claims 1 and 9-11 above in view of Lyu et al. (USPN 6,001,539).

Kim discloses a LCD device that is basically the same as that recited in claim 5 except for the protective film of the thin film transistor formed by stacking an inorganic material film and an organic material film. As shown in Fig. 2B, Lyu et al. discloses that a protective film of the conventional LCD has a layered structure having organic and inorganic films 10, 15. The inorganic insulating film is formed on the organic film prior to forming pixel electrode 12 in order to improve adhesion between the pixel electrode and the organic film (col. 1, lines 55-67). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD device of Kim with the teaching of Lyu et al. by forming a protective film of the thin film transistor consisting of an inorganic material film and an organic material film so as to obtain a good adhesion to the pixel electrode.

Allowable Subject Matter

7. Claims 3, 4, 23 and 24 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically,

Re claim 3, none of the prior art of record discloses, in combination with other limitations as claimed, a liquid crystal display device comprising charges-holding capacitance sections, each of which has an upper electrode, a dielectric film and a lower electrode,

wherein said dielectric film is formed between said lower electrode and the upper electrode at each of said charges-holding capacitance sections, and said upper electrode contacts with said dielectric film through a contact hole provided by perforating a protective film formed over said dielectric film and a semiconductor layer provided between said protective film and said dielectric film is selectively etched to be only around said contact hole.

The most relevant reference, USPN 6,091,466 of Kim et al., fails to disclose or suggest a semiconductor layer formed around said contact hole. The Kim et al.'s reference discloses a storage capacitor electrode 51 formed around the contact hole 81 by etching as shown in Figs. 2D-2F (col. 3, lines 10-18); however, this electrode is not a semiconductor layer.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong

01/05/04


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